

RCS PLANS FOR USER SITE COMPUTERS

INPUT

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REMOTE COMPUTING SERVICES COMPANIES'
PLANS FOR USER SITE
COMPUTERS

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REMOTE COMPUTING SERVICES COMPANIES' PLANS
FOR USER SITE COMPUTERS

TABLE OF CONTENTS

	<u>Page</u>
INTRODUCTION	1
I FINDINGS	2
II VENDOR ANALYSIS	5
A. ADP	5
B. NCSS	11
C. TYMSHARE	17
D. RAPIDATA	19
E. MCAUTO	21
F. CDC	24
G. KEYDATA	27
III INITIAL CASES	27
ADDENDUM	29
EXHIBIT	
II-1 COMPARISON OF ADP AND NCSS HARDWARE OFFERINGS	12

INTRODUCTION

INTRODUCTION

- The objective of this brief study was to determine what leading RCS companies, such as ADP, National CSS, and Tymshare, plan for computer mainframes at the user's establishment.
- Questions to be addressed include:
 - Their perception of the market.
 - Reasons for them to be in it.
 - Marketing and sales structure.
 - Network integration, extent and mode of operation.
 - Target accounts, specialization (if any).
 - Expected impact on margins, etc.
- INPUT interviewed vendors and knowledgeable third parties on the issues involved.

I. FINDINGS

I FINDINGS

- INPUT believes that the ADP and NCSS on-site minicomputer announcements add a new dimension to the Remote Computing Services marketplace, in particular, and to the EDP industry in general.
- INPUT believes that, ^m ~~assuming~~ initial success is achieved, both ADP and NCSS will announce further developments.
- ADP and NCSS have added the value of their proven and effective software systems (operating systems, communications, and programming systems) together with their extensive networking to cost/effective mega-mini hardware. This move will enhance the use of distributed computing in the marketplace.
- By implementing their software in this manner, ADP and NCSS have finally brought effective software to the mini marketplace.
- Data processing managers will welcome their announcements. It affords them an easy vehicle for bringing remote computing back under their wing. RCS vendors will have to take a new look at their relationships with D.P. managers of large-scale host installations.
- Users and vendors of all types are aware of improving hardware economics and broadening range of problem solutions.

- As absolute dollar expenditures for RCS increase, this budgetary item becomes an inviting target for hardware suppliers.
- However, the provision of processing capability (unlike that from the traditional hardware supplier) is only one component of RCS. The other value added components are:
 - Problem analysis and solving.
 - Responsiveness to end user requirements.
 - Software array.
 - Availability; reliability and back-up.
 - Communications networking.
 - Training.
 - Documentation.
 - Special feature: public data bases, proprietary models, special peripherals, etc.
- For these reasons it is clear that Remote Computing Services vendors are logical providers of on-site hardware supported by their other related services.
- No RCS vendor can ignore this development because it dramatically changes the prevailing price level for large quantity use of RCS resources and offers users an exciting new set of options to think about in selecting a service.

- Likewise, hardware vendors must think very carefully about how to counter and/or participate in this new activity because it literally combines the best of both worlds - hardware and service - into a logical and, for some users, more appropriate meld of capabilities than currently available from hardware suppliers.
- However, there are a number of factors which could be very damaging to NCSS and/or ADP:
 - Good maintenance is vital to the success of these products; neither company has any demonstrable experience. Poor maintenance will kill them!
 - Neither company appears to have fully addressed the "self-impact" question satisfactorily. This could seriously impact their growth and profitability.
 - Neither company, but particularly ADP, seems to have addressed the impact on their present sales force.
- INPUT believes that the packaging of hardware and services from ADP and NCSS presages IBM's position in the 1980s.

III. VENDOR ANALYSIS

II VENDOR ANALYSIS

A. ADP

I. PERCEPTION OF THE MARKET

- ADP views the ONSITE service as an extension of their present network services, using a new, and for some users, more cost-effective delivery vehicle.
- ADP stresses the cost benefits of buying shared use of a vast array of software, a large international technical support organization, extensive networks, combined with much more affordable processing resources on-site.
- At the same time, the user can avail himself of the traditional arsenal of timesharing services including:
 - Tracking and monitoring usage.
 - Remote performance monitoring and fault diagnosis.
 - Remote hardware and software maintenance.
 - Back-up.

- Special peripherals such as plotters and typesetters, when needed.
- Access to shared data bases.
- Geographically dispersed legion of problem solvers, helpers, and trainers.

2. REASONS FOR ENTRY

- ADP feels that recent advances in computer technology have made mega minis extremely cost-competitive for interactive problem solving applications. They feel that the DEC 2020 is a leading example of the coming trend. Others they expect are 32 bit entries from Data General, Interdata, and Prime. They saw the DEC 2020 as a compatible opportunity to successfully integrate into their network.
- The move has dual purpose. It permits ADP to reduce prices, which greatly reduces the risk of losing large customers in their client base. It also offers the opportunity to extend their service offerings within a client company by increasing the probability of becoming the single remote computing services vendor. ADP even sees the likelihood of large mainframe users off-loading timesharing (TSO for example) from their mainframes.

3. NETWORK INTEGRATION

- The ONSITE service is closely coupled with the ADP network. Although it is possible to disconnect from the network (manual console switch) while running with highly sensitive data, the primary mode of operation is on-line to the network.

- The ADP concept is that of a totally bundled service:
 - Mini hardware on-site.
 - ADP operating system and system software.
 - Professional services.
 - Maintenance.
 - On-line fault detection, isolation, and reconfiguration.
 - A minimum level of network host usage.
 - Utilization of VAN networking services.
- ADP has added both a micro maintenance processor and a micro communications processor which link the DEC 2020 closely to their network. The micro communications processor implements packet switching in the network. The maintenance processor monitors the DEC 2020 for both utilization and fault detection. ADP monitors the ONSITE systems around the clock from a central control facility which is used for troubleshooting and for dispatching maintenance personnel for repair and maintenance.
- Remote diagnostics will be run nightly against each installation, from Ann Arbor, with some capability for remote reconfiguration to patch around bad memory or whatever; the hardware is configured to provide enough redundancy to maintain 99.5% uptime or better. Approximately once a month the installation will receive physical preventive maintenance by an ADP field maintenance person. For this reason no installations will be made initially that cannot be adequately and timely serviced from one of the initial marketing areas.

4. IMPACT ON MARGINS

- ADP boasts of an order-of-magnitude of cost performance improvement based on comparison of ONSITE charges versus the retail rates for adhoc timesharing from a dozen other RCS vendors.
- ADP says the average cost among these vendors is \$31 per hour as compared to \$3 per hour using "ONSITE."
- Actually, the typical large RCS user who could afford the \$16,000 per month, 32-port system used in ADP's example, pays about one-half to two-thirds the rate shown. Dedicated ports are widely available in the \$2,000-3,000 per month range.
- Second, assuming 100% utilization of all 32 ports for 40 hours per week is probably unrealistic.
- Therefore, the comparison might better be made at 70% utilization of on-site (yielding a per port cost of \$4.30 per hour) versus \$15 per hour for regular service. This is still a 3½ times improvement, not to be taken lightly.
- ADP has bundled the value of their operating system and systems software with that of the ONSITE hardware. The bundled price plus quantity discounts for the DEC 2020 (greater than 100 on order) protect ADP's margins.
- Pricing will be based on a 24 or 36 month service agreement ranging from approximately \$10,000 per month for a system consisting of the DEC 2020 (with proprietary microcode modifications), 1 megabyte of internal memory, 90 megabytes of local disk storage (2 drives), a 300-lpm printer; approximately 20 hours allowance for connection to the network; approximately 100K allowance for central data storage; and a 3-language package (Basic, Fortran, COBOL). This level of system would be expected to accommodate at least 16 simultaneous local users.

- A larger system may accommodate 32 users and consist of 2 megabytes of internal memory, 300 megabytes of local disk storage, a 600-lpm printer, IPL for data base management, and a larger allowance for central system resources. This level would run approximately \$16,000 per month.
- In both cases, exact costs would be based on the specific configuration calculated to meet the typical "needs profile" established by the customer's expected mix of jobs and resources required. Note: additional costs may be expected to accrue from use of the network to move data either between remotes or from remote to central and vice versa, as well as from use of any of the proprietary packages or databases (Financial Modeling System, Graphics, Compustat, etc.). No specific cost breakdowns are available, but it seems that discounts from standard prices would be negotiated for ONSITE clients who expect to be large users of some of these other services. A figure of "way under \$1000 per month" to add IPL capability to the lower level system is an example of this.
- While ADP admits to some business risk of "trading in" a \$30,000/month services client for a \$10,000 ONSITE client, they downplay this risk. They expect to add many new clients to their present base, who would essentially use ONSITE in a distributed data processing mode. They also expect ONSITE to replace the second and third service companies with clients who use ADP and other companies, e.g., Tymshare, CompuServe, etc.

5. MARKETING STRUCTURE

- ADP does not plan to use a separate sales force, but will back up the regular field sales people with a team of "product specialists" trained in both software and hardware capabilities of ONSITE to determine the best configuration for each installation. The ADP salesman will execute the ONSITE prospect and the specialist team will assist in matching the service to the customers' needs.

identify

- The specialists will conduct a "needs profile," configuring the ONSITE system to the initial intended ~~risk~~ of time sharing, RJE, and batch requirements as assessed jointly by ADP and the customer.

6. TARGET ACCOUNTS

- The ONSITE service is targeted at users of remote computing services with annual RCS expenditures greater than \$300,000. Early customers are existing ADP clients, including General Motors.
- ADP will concentrate on replacing other DEC 10-based RCS vendors.
- ADP also expects to pick up business by working with EDP managers to off-load timesharing from large-scale hosts (for example TSO).
- ADP will target its initial offerings in nine large metropolitan areas in order to ease into field service and engineering operations. The areas are:
 - Boston
 - Chicago
 - Cleveland
 - Detroit
 - Houston
 - Los Angeles
 - New York
 - San Francisco
 - Washington, D.C.
- First installation will be July 1978.

B. NCSS

1. PERCEPTION OF THE MARKET

- NCSS, like ADP, has announced a family (NCSS 3200) of minis for on-site use of its customers. There are some similarities as well as some significant differences in both the hardware offerings and NCSS's market entry approach (see Exhibit II-1).
- NCSS indicates that the Series 3200 is not intended to be a starter mini, but is intended to be placed with larger companies. It will be offered as a more cost-effective system to large IBM installations which are doing a degree of in-house (i.e., TSO) timesharing. The Series 3200 will enable the customer to off-load his large mainframe and take over some outside timesharing.
- NCSS will offer the Series 3200 either for purchase or on a full payment (third party) lease. The basic system in the family will sell for \$185K with the software and the most extended system for \$800K. NCSS will negotiate price discounts for quantity installations.

2. REASONS FOR ENTRY

- NCSS bases market entry on:
 - Series 3200 is price competitive with the IBM 370/138 with twice its performance.
 - Series 3200 is IBM compatible, requiring little, if any, applications programs conversion.
 - Capitalizing on the value added of the reliable NCSS software including:
 - Operating system - VP/CSS.
 - Systems software - COBOL, PL-I, APL, FORTRAN, BASIC, NOMAD (DBMS).

COMPARISON OF ADP AND NCSS HARDWARE OFFERINGS

FUNCTION	ADP	NCSS
<u>SYSTEM</u>		
• MINI	DEC 2020	SYSTEM 3200
• WORD SIZE	32 BIT	32 BIT
• MEMORY (MAX. SIZE)	2.5M BYTES	2M BYTES
• DISC (MAX. SIZE)	1.5M BYTES	2B BYTES
• STANDALONE	NO	YES
• HOST SYS. NETWORKING	YES	YES
• VAN NETWORKING (PACKET SWITCHING)	YES	YES
• SALE	NO	YES
• LEASE	YES	YES
• BUNDLED SERVICE	YES	NO
• TERMINALS	16-32	1-32
• LINE PRINTER	300-600/PM	300-1,000/PM
• ENVIRONMENT	OFFICE	OFFICE
• COST (RANGE)	\$10,000-16,000/MO. (24-36 MONTH LEASE)	\$185,000-\$800,000 (PURCHASE)
• MAINTAIN	YES	YES
• DOWN LINE PROGRAM LOADING	YES	NOT YET ANNOUNCED
• REMOTE FAULT DIAGNOSIS	YES	NOT YET ANNOUNCED
• MAINT. MICROPROCESSOR	YES	NOT YET ANNOUNCED
• MULTI-LEVEL DATA SECURITY	YES	YES
• MONITORING SERVICE USAGE	YES	NOT YET ANNOUNCED

EXHIBIT II-1 (CONT'D.)

COMPARISON OF ADP AND NCSS HARDWARE OFFERINGS

FUNCTION	ADP	NCSS
<u>SOFTWARE</u>		
• OPERATING SYSTEM	DEC	VPS
• COBOL	YES	YES
• FORTRAN	YES	YES
• PL/1	YES	YES
• DATA BASE (1)	IDL	NOMAD
• FINANCIAL (1)	TSAM, FML	ESL
• PROJECT MGMT. (1)	APECS	YES
• GRAPHICS (1)	YES	YES
• TEXT PROCESSING (1)	YES	YES

(1) ADDITIONAL COST

- The ability to bring to the mini market high quality operating and systems software which have hitherto been missing.
- NCSS plans that the user will turn to NCSS as they need excess capacity and will use NCSS for specialized applications, including specialized data base (i.e., economic, financial, industrial) access.
- NCSS views its entry as positive and aggressive. It has become an IBM plug-compatible mainframe supplier, but one that starts from software as a strength rather than hardware, as is the case with Amdahl, Itel, and other PCMs.

3. NETWORK INTEGRATION

- The NCSS System 3200 can also be integrated with the NCSS network, either utilizing a network host or in communication with other user minis through the NCSS packet switching network.
- NCSS also believes that they will sell Series 3200s in new application areas. They have applied to the FCC to become a VAN vendor. Customers can use the Series 3200 to create an effective distributed computing network. They feel that their data base system (NOMAD) with its relational capability gives them a leading advantage in distributed data base applications. (Moving results rather than large amounts of data around the network will greatly reduce communication costs.)
- NCSS feels that they are offering the user a total systems capability:
 - Outstanding and reliable software.
 - Enhanced hardware.
 - Extensive and economic communications networking.

- Professional services.
- Hardware maintenance.

They quote the adage, "The best of all possible worlds for reliable systems is new (LSI) hardware and old (debugged) software."

4. IMPACT ON MARGINS

- NCSS has added the value of its operating system (VPS) and system software to that of the on-site hardware. The price plus quantity discounts for the Two Pi hardware and peripheral (over 100 on order) protect NCSS margins.
- They use the same rationale as does ADP for those on-site System 3200s that will be installed with their current customer base.
- A typical configuration consisting of a 512K-byte System 3200, the UPS operating system, a 75-megabyte disc, a 45-ips tape drive, eight (8) communication lines and a CRT console sells for \$235,000. A large system which would be used for distributed processing might consist of three (3) CPUs (one-megabyte and two (2) 512K-byte system 3200s), three (3) 256K-byte networking memories, a 75-megabyte disc for spooling, a CRT, and operating network software which would sell for about \$800,000. Additional memory, available in 256K-byte modules, is priced at \$15,000 each. Monthly maintenance is \$700.

5. MARKETING STRUCTURE

- NCSS plans that its newly formed computer division will grow at the rate of 70%/year after the first year and will equal the size of the timesharing division within five years.

- The NCSS Computer Division will have its own sales, product marketing, and field services and engineering departments. NCSS plans to integrate the System 3200 systems components (Two Pi, Memorex 3330 disks, Pertec tapes, Dataprinter 300/1000/PM printers, and selected CRTs), test and ship from division headquarters in New England.
- NCSS will maintain a diagnostic center that the field service people can plug into, but they, as yet, do not plan to implement their automatic network diagnostic capabilities down to the on-site hardware. This option is open to them by field change for those users on-line to the NCSS network.

6. TARGET ACCOUNTS

- The NCSS is offering the System 3200 first as a stand-alone mini with the NCSS value added operating system (VPS) and system software. Alternatively, the System 3200 can be used as a distributed system either communicating with the NCSS network hosts or utilizing the newly announced NCSS Value Added Network (VAN). NCSS expects to sell 80% of their Series 3200 systems initially to the stand-alone market.
- NCSS is targeting the System 3200 for companies who have either in-house or RCS annual expenditures in excess of \$300,000.
- NCSS indicates that the System 3200 can efficiently operate timesharing, RJE, and batch concurrently. In that regard, the Series 3200 could be used as RJE (HASP) to a user's larger IBM mainframe.
- NCSS plans to first offer the Series 3200 in 4-5 major metropolitan areas (New York, Boston, Chicago, Los Angeles, and Dallas) so that they will not become over extended in the field services area.

C. TYMSHARE

I. PERCEPTION OF THE MARKET

- The Business Week article of March 27 quotes Tymshare as planning to use the DEC 2020 as an "applications engine" to move customers from Tymshare's DEC network to their own in-house machine.
- One may ask the question, "Why hasn't Tymshare, which has the obvious advantages of already having its own Value Added Network (VAN) and an in-place maintenance organization for servicing intelligent terminals, announced an on-site mini service before ADP and NCSS?" Tymshare feels that thus far the risks in entering the on-site hardware business are not worth the potential revenue return for them.
- Tymshare has no firm plans yet to announce an on-site mini for either their DEC or IBM supported network. Their posture appears to be that of caution - of wait and see how NCSS and ADP do in the marketplace. Tymshare feels both ADP and NCSS moves are defensive. Tymshare does feel that the ADP and NCSS announcements are causing them to look again at their plans for distributed processing (which they report have been under development for over two years). They feel that the ADP and NCSS announcements increase the risk to Tymshare of doing nothing.
- Tymshare feels that their customer base is more secure than that of either NCSS or ADP. Tymshare feels that their value added worth to their larger clients is significantly greater than that of ADP or NCSS due to the applications and professional services orientation of Tymshare's offerings.
- Tymshare sees some significant business risks for both NCSS and ADP in entering the "computer hardware vendor" business. Neither has an established and experienced field service organization to repair and maintain the on-site

minis, including the peripherals. In addition, it remains to be seen how well and efficiently NCSS and ADP will be able to run their operating systems, systems software, and converted customer application programs on the announced minis. Tymshare cites the problems CITIBANK, with all of their vendor support, is having with both operating and operating efficiency of their financial applications on selected minis, as a graphic example of what lies ahead for NCSS and ADP.

- Tymshare feels that the NCSS method of corporate formation (capitalizing software, establishing a computer subsidiary, and joint venture involvement) indicates the high degree of risk involved. Using an unproven, indeed not yet operational mini (Two Pi) only emphasizes the risk even more.
- Tymshare is keeping its options open. It has outlined four options for entry into distributed computing :
 - An alternative to delivery of standard timesharing using a mini loosely coupled to Tymnet.
 - New ways to address small business systems with emphasis on stand-alone minis.
 - Using highly intelligent terminals for data entry and data base access closely coupled to Tymnet.
 - Turnkey applications in specialized areas delivered on a mini, detached, or loosely coupled with Tymnet.
- Tymshare expects to make announcements in one or more of the above areas before the year is out.
- Datamation reported (April 1978) that Tymshare, Inc. aims to move customers from its shared DEC system to their own machines using a DEC 2020 sometime in the late spring.

- However, INPUT believes that the announcement is likely to be an IBM-compatible system.

D. RAPIDATA

1. PERCEPTION OF THE MARKET

- A definite must, particularly for budget-conscious large accounts. This vendor is already in the business in a few scattered situations. As a result of current interest, this effort will take on more structure and prominence than before.

2. REASONS FOR ENTRY

- Only a few clients will need the economies of scale of in-house hardware together with the value-added components of RCS:

- These will be the larger ones, looking at a timesharing budget that has been growing steadily and now threatens to "get out of hand."
- These uses will be lost business unless they can be assured of greater processing capability, equivalent to an in-house timesharing utility, at prices comparable to what they are paying now.

3. NETWORK INTEGRATION

- Very few applications lend themselves to lower echelon processing on user sites with central consolidation on the vendor's central hardware.
- If anything, the reverse will be more true; namely that the vendor's network and processing facility will be used for data collection, passing it on for processing on the user's computer.

- The typical user will retain network compatibility with the vendor but probably use it rarely. Applications will tend to gravitate wholly to the user's system.
- If communications services are needed between the user's terminals and peripherals on the one hand and his user-site computer, the choice of services will be a matter of convenience and economics, that is, between:
 - Dedicated leased lines.
 - Specialized common carrier services, including Value Added Networks.
 - Connection with the vendor's network.

4. IMPACT ON MARGINS

- Margins will not suffer. Pricing, contract terms and other aspects are planned to yield margins comparable to present RCS activities.
- Their perception of what other vendors are doing confirms that nobody is "giving away the store"...merely providing a quantity discount based on genuine processing economics.

5. MARKETING STRUCTURE

- Selling and customer support will be handled by the present field organization supported with the addition of specialists, probably at a regional level.
- Specialists will provide pre- and post-sale technical support to on-site hardware prospects and users, reflecting the fact that some of the sales considerations and much of the installation planning and support will be different.

6. TARGET ACCOUNTS

- Although this vendor has successful prior experience in providing turnkey stand-alone software in a special situation, this is not considered a model for the future:
 - They see increased prominence and good marketing "coinage" in dealing with major accounts, but
 - Very modest impact on the business: a few percent of revenue from this source.
 - The offering will not be industry or application sensitive. It is more a question of size, processing economics, and user preference.

E. MCAUTO

1. PERCEPTION OF THE MARKET

- Basically, undecided about entering this market now. Actively considering it and looking at mini and microcomputers.
- Sees them as an opportunity to expand service rather than as a threat.
- Sees incorporation of user-site hardware as inevitable. Only a question of how and when.

2. REASONS FOR ENTRY

- Users will benefit in two ways:

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- Pure cost reduction without significant enhancement of capability. Typically, the user watching his monthly timesharing bill climb wants to put a cap on it. He is a candidate for some kind of fixed price arrangement.
- Expanded capability. This will be application-dependent and will inevitably draw the vendor into a semi-turnkey kind of business, but with an umbilical, not stand-alone. (See discussion on network integration below).

- Vendor will benefit:
 - Opportunity to expand revenues (partly at the expense of hardware vendors).
 - Definitely a marketing "plus" for an RCS vendor to offer it as eventual hedge or long range alternative. Users knowing they can take it in house at any time in the future.
 - A means of retaining major accounts that will otherwise be irretrievably lost to in-house timesharing equipment when the monthly services bill gets high enough and/or the in-house EDP unit feels ready to install and manage its own RCS utility.

3. NETWORK INTEGRATION

- This vendor has no intention of offering user site hardware not closely integrated with their network.
- Users who want hardware without professional network management and other communications-involved added-value services can get it cheaper from the manufacturer.

- Legitimate needs for the network umbilical will include:
 - Back-up and overload processing capability.
 - File sharing and sophisticated file management techniques inappropriate to small machines.
 - Access to proprietary data bases
 - Technical surveillance and control by professionals at RCS headquarters. This applies to maintenance and management of both the hardware and the user's share of the network.

4. IMPACT ON MARGINS

- Contract terms and pricing will be very sensitive. Must strike a balance between attractiveness and upheaval of present user base.
- Outright sale of hardware does not appear to be in the cards.
- Most probably, hardware will be bundled with all the other value added services on a fixed or nearly fixed monthly charge basis.
- All this will be done, as a matter of policy, to preserve present margins. The only possible exception would be under severe competitive pressures, which are not foreseen at the present time.

5. MARKETING STRUCTURE

- Assuming a reasonable degree of training, the present organization is expected to sell and support accounts which are buying traditional services via the new hardware vehicle.

- New industry/application markets engendered by on-site hardware may require dedicated sales and service departments to the extent they are distinctly different from current ones.
- As an example, a classical timesharing house entering the retail POS market would undoubtedly do so with a dedicated sales and service organization, specially recruited, trained, managed and organized to suit the unique requirements of that market.

6. TARGET ACCOUNTS

- By virtue of lowered costs and enhanced flexibility, may facilitate attacking whole new industry and application areas...probably on a turnkey basis.
- Otherwise, the user-site alternative is seen as a different delivery vehicle for present products. Account size and quantity of usage will be the main determinant.

F. CDC

I. PERCEPTION OF THE MARKET

- They see the opportunity as part of a continuum ranging from dumb terminals on-line to their data center, through progressively more intelligent interactive and/or remote batch terminals, perhaps culminating in stand-alone hardware with only dial-up connection for technical support such as fault diagnosis and software updating.
- They are definitely planning to be in the business as an opportunity to expand the scope of services offered, hence, expand their revenues.

2. REASONS FOR ENTRY

- Users with widely varying workloads can elect user-site hardware to meet average requirements most economically and resort to RCS services for peaks.
- Communications costs become a critical factor where interactive computing requirements are large and geographically concentrated. It will be more economic to cluster timesharing on local hardware than utilize a communication network to a central facility.
- These are complex applications requiring special resources and expertise beyond the capacity of most minis and the interest of most hardware vendors. The use of an on-site mini where most of the application could be accomplished by the mini with the remainder being done on the network host is attractive in specific industries or "disciplines" (i.e., electronics design).

3. NETWORK INTEGRATION

- This vendor expects gradations of integration specific to various industries and applications and even to the vagaries of specific accounts.
- Minimum common denominator will be a technical umbilical for remote monitoring, troubleshooting, software update distribution and, perhaps, some limited remote software repair and modification. This may take the form of a single dial-up communications port on an otherwise stand-alone system.

4. IMPACT ON MARGINS

- By sticking to a high value-added content, selling solutions and end-user benefits rather than processing, margins will remain adequate.
- Pricing will be a function of value and markets will be selected where the value of solutions offered remain high.

5. MARKETING STRUCTURE

- Will probably approach in an industry or discipline-specialized fashion.
- Even the undifferentiated product will probably not be sold by the average territory salesman because it will apply to a few standard business accounts.
- Specialists in certain discipline or cross-industry applications used by larger accounts will be given the user-site hardware mandate.
- Much of the activity will be concentrated in new markets which will generate net new manpower additions to the sales and service organization. These people will be recruited and trained to suit the intended target markets.
- Overall, there will likely not be a parallel organizational structure: just pockets of specialization within the present one.

6. TARGET ACCOUNTS

- Larger users of RCS resources.
- Special industry/application fields, yet to be defined, where a hardware or part hardware part service approach is particularly useful.
- This vendor puts heavy emphasis on end-user problem solving and value-added benefits as opposed to computing "commodity" vending.
- Ideally, method should be as nearly transparent to the user as possible, hence, a total solution turnkey-type approach is the desired one.
- They would not stop short of providing a complete stand-alone mini package for certain classes of customers, so long as the value of their software, industry/application expertise, geographically dispersed sales and service organization or other relatively unique capability could predominate in the client's decision-making process.

III. INITIAL CASES

III INITIAL CASES

- Company with 25 or so service offices doing manual data base, accounting and reporting work wishes to automate one office as a test. If successful, wants to extend to all. Concerned about a timesharing solution as excessively costly in the long run.

ADP's "on-site" service announcement tips the scale because the prototype can go up quickly without any long-term commitments. If successful, the customer can elect to continue in that mode, switch to individual systems in larger offices, regional systems or even central host systems - all interconnected through the T/S network and using the same systems and applications software.

- A major company currently spending \$7,500/month for standard T/S service with ADP. New application is contemplated which, if put on the T/S network, would drastically increase monthly costs.

Began shopping for in-house hardware. Then, when on-site was announced, quickly concluded that it was the correct answer.

Cost will be around \$15-16,000/month for several times the present level of service. The hardware will be located and serviced exactly where the user wants it. The present T/S applications will run on it unchanged. And, finally, development of the new application system can begin immediately, months before the intended delivery of the hardware.

- A manufacturer experiences inventory and production control problems in the U.S. and overseas. Builds a \$500/month terminal-oriented application as a prototype using IPL, a generative application language offered on ADP's network services. The success of the prototype breeds additional work totalling around \$2,000 per month.

A desire to make the new applications available to its overseas locations leads customer to conclude that timesharing will be too expensive and he begins shopping for hardware, for separate U.S. and international installation.

On-site announcement solves this client's problem neatly. He has ordered a system for installation in his U.S. headquarters which will:

- Provide his U.S. and international computational needs at a fraction of timesharing rates and below what multiple in-house systems would cost.
- Act as his own captive timesharing host for domestic and overseas use, riding ADP's network, as required.
- Support terminal interface processors (concentrators) in major remote locations with hard-wired terminals and high speed printers, further reducing communications costs.
- Retain 100% of his currently developed application software and the corresponding training and skills acquired in the process of their development.

IV. ADDENDUM

ADDENDUM

This addendum contains a description of the manner in which one industry specialized services company offers on-site hardware for applications processing.

COMPANY: MICOR, Inc.

LOCATION: Headquartered in Phoenix, Arizona

OWNERSHIP: Wholly-owned subsidiary of Ramada Inns, Inc.

SIZE: Revenues: 1974 - \$1.1 million 1977 - \$17 million
1978 - Over \$23 million

Captive Revenues: Less than \$3 million in 1977

BUSINESS: Design, implementation, operation, and maintenance of transaction processing networks.

- MICOR was founded in 1972 to provide transaction processing capability to the modern business community. The first project was to provide a nationwide reservation network for the hotel industry. The system became operational in June of 1974. Since that time, the MICOR system has become the largest independent reservation system in the world, servicing over 2,500 properties including five major hotel chains.

- The system is a distributed processing network containing over 800 intelligent mini-computer-based terminals. The network includes both switched, asynchronous communications at 1200 bps as well as synchronous private line communication at 4800 and 9600 baud.
- MICOR manages two system control locations, one in Omaha where all of the switched lines communicating with Property Terminal Units are hubbed and the other one in Phoenix, from where all of MICOR's private lines are controlled as well as communications with teletypes.
- MICOR maintains field engineering capability in approximately 30 cities in the U.S.

USE OF ON-SITE HARDWARE

- MICOR's network uses of DEC mainframes; DEC 10s are used as hosts while PDP 11s are used as on-site controllers and terminals.
- At a further level, MICOR has a custom designed, microprocessor controlled POS terminal. These terminals are installed in hotels and tied-in to the mini-based guest accounting system supplied by MICOR.
- Texas Instruments' microprocessors are used in these terminals, which MICOR manufactures and assembles. MICOR specifies its own boards from TI.
- Software cannot be loaded locally into the mini and micro systems: it is all down-loaded through the network. Also, diagnostics are run through the network via the system's control centers.
- The DEC 10 hosts have front-end processors enabling interfaces with a variety of other systems to be built. Also, MICOR has its own COBOL compiler which has a back-end output generator for DEC and TI.

QUESTIONS TO BE ADDRESSED IN THIS REPORT

1. What is MICOR's perception of the market?

MICOR believes that the ability to operate and maintain a transaction processing network requires on-site processors. It considers the market for such services to be very large: virtually all companies and groups of smaller companies, as represented by its EFT contract in Nebraska.

2. Reasons for MICOR to be in the market with on-site processors.

End-to-end control of the hardware, software communications, and service. MICOR is effectively providing network facilities management. It has geared itself to support this market by building its own diagnostic and maintenance capability.

3. Marketing and sales structure.

Very high-level sales effort from a small, skilled team. Basically, the EDS approach. Builds a sale on detailed knowledge of:

- a) Network requirements
- b) Application analysis

4. Network integration, extent, and mode of operation defined above.

5. Target accounts and industry specialization.

For reservation system, MICOR targets hotels and resort activities.

Other targets are EFTS for banks and other financial institutions and Blue Cross/Blue Shield organization.

Large account sales (\$ multi-million per year) are the target.

On-site hardware (end-to-end) capability is a major plus in these efforts.

6. Expected impact on profit margins.

On-site hardware has a large positive impact on profit margins. This is because MICOR does its own manufacturing/assembling and maintenance. It achieves much higher profit margins on the hardware delivered in a network FM than on the service.

